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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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OBLON, SPIVAK, MCCLELLAND, MAIER & NEUSTADT, P.C. 1940 DUKE STREET ALEXANDRIA, VA 22314				
			EXAMINER UHLIR, NIKOLAS J	
			ART UNIT 1773	PAPER NUMBER

DATE MAILED: 11/17/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/926,609

Applicant(s)

MESSERE ET AL.

Examiner

Nikolas J. Uhlir

Art Unit

1773

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 27 October 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 52-73 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 52-73 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- ☐ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 10/27/2004
- ☒ Interview Summary (PTO-413)
Paper No(s)/Mail Date 10/29/04
- ☐ Notice of Informal Patent Application (PTO-152)
- ☐ Other: _____

DETAILED ACTION

1. This office action is in response to the amendment/arguments dated 10/27/2004. Applicant's amendment cancelled all of the previously pending claims, and inserted new claims 52-73. As the prior applied rejections are drawn to claims that now stand cancelled, these rejections are hereby withdrawn. However, the amendment/arguments are not considered to be sufficient to overcome the previously cited prior art.

Examiner's Note

2. The examiner thanks the applicant's for the opportunity to meet with them during their visit to the United States. The explanation of the invention given during the interview on 10/20/2004 shed a clarifying light on the invention and its purpose.

Information Disclosure Statement

3. The examiner has considered the information disclosure statement dated 10/27/2004. A signed and initialed copy of the information disclosure statement accompanies this office action.

Claim Rejections - 35 USC § 112

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

5. Claim 52 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. The term "rapid" in claim 52 is a relative term which renders the claim indefinite. The term "rapid" is not defined by the claim, the specification does not provide a standard for ascertaining the requisite degree, and one of ordinary skill in

the art would not be reasonably apprised of the scope of the invention. How fast is "rapid" exposure?

6. The examiner notes that this rejection can be overcome simply by deleting the term "rapid" from the claim.

Claim Rejections - 35 USC § 103

7. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

8. Claims 52-55, 57-60, 62-66, and 68-72 are rejected under 35 U.S.C. 103(a) as being unpatentable over Florentin et al. (US6052965) in view of Scholz et al. (US5753373).

9. Claim 52 requires a refrigerated door enclosure comprising a transparent glazing, said glazing comprising at least one viewing area, wherein the viewing area has deposited on at least one surface thereof an antifrosting adsorbent layer consisting essentially of a polymeric coating, said polymeric coating comprising at least one polymer selected from the group consisting of a polyvinylpyrrolidone, a polyvinylpyridine, a polyacrylate, a polyacrylamide, a polyvinyl acetate, a polyacrylonitrile, a polyvinyl alcohol, a polyacrolein, a polyethylene glycol, a polyoxyethylene, a polyurethane, and copolymers based on one or more thereof, and wherein said at least one surface and antifrosting adsorbent layer, after being maintained in a closed refrigerated environment at -28° C, prevents the visible formation of condensation and frosting upon rapid exposure to room temperature and humidity for 12 seconds.

10. The examiner notes that absent a clear indication in the specification or the claims of what the basic and novel characteristics actually are, "consisting essentially of" will be construed as "comprising" (see MPEP 2111.03). Applicant in the instant case has not provided a clear description/statement of what the basic and novel characteristics of the instant invention. Accordingly, the examiner construes "consisting essentially of" in claim 52 as "comprising." However, even if it should be determined that the basic and novel characteristic of the invention is the claimed property, there is no evidence on the record that establishes that the inorganic particles in the Scholz coating (as discussed below) materially impact this property. Thus, irrespective of the interpretation of "consisting essentially of," the limitations of claim 52 are met as set forth below. Further, the examiner interprets "rapid exposure" to mean simply "exposure" as "rapid exposure" is relative term which can be met by any speed of exposure.

11. Bearing the above interpretation in mind, Florentin et al. teaches a door or wall of an environmental chamber, in particular a glazed door or wall, and more particularly a refrigerated chamber in which cold or frozen products are displayed (column 1, lines 7-13). This environmental chamber consists of an insulating panel comprising at least two glass substrates, which are separated from one another via surfaces mounts. The space between the two glass sheets is a vacuum (column 3, lines 5-10). Florentin et al. teaches that this vacuum insulating glazing panel exhibits better thermal insulating properties than prior known insulating panels (column 4, lines 25-32 and Table 1). Florentin teaches depositing a thin layer of conductive material around the periphery of

one of the surfaces of the vacuum insulating glazing, and a depositing separate conductive material on the center portion of the same surface, such that the center and periphery portions can be independently heated via a current provided by electrodes to prevent the appearance of condensation (i.e. fog) on the surface of the panel (column 6-20). Thus, the examiner takes the position that Florentin et al meets the requirement of a refrigerated door enclosure.

12. However, Florentin et al. does not teach an antifrosting adsorbent material layer as required by claim 52.

13. However, Scholz et al. (Scholz) teaches a coating composition having anti-reflective and anti-fogging properties, wherein the coating composition is adventitiously applied to substrates such as windows and windshields (column 20, lines 13-31. The anti-fog function of the coating is performed by the coating either resisting the formation of water droplets on its surface or by adhering a uniform film of water on its surface such that the transparency of the film is not reduced (column 5, lines 30-47).

14. The adherence of a gas, liquid or vapor at the surface of a material is the quintessential definition of adsorption. Accordingly, the examiner takes the position that the Scholz film meets the requirement of an antifrosting adsorbing film. Furthermore, the Scholz window or a windshield is considered by the examiner to be equivalent to applicant's claimed transparent glazing having at least one viewing area.

15. Scholz teaches that the coating composition contains a binder, which can be a material such as polyvinylpyrrolidone (PVP), polyvinyl alcohol (PVA), polyvinyl acetate (PVAc), and polyurethane's (PU) (column 19, lines 60-67). It is noted that PVP, PVA,

PVAc, and PU are specifically recited in the claims and the specification as types of hydrophilic polymer binder that are suitable for use in the instant invention. The coating composition is effective for the prevention of fog on a number of substrates, including windows (column 3, lines 60-65). In particular, the film is useful on surfaces where there is a large temperature and humidity difference (column 1, lines 59-61). A refrigerated door enclosure such as that disclosed by Florentin would be readily recognized by one of ordinary skill in the art as a place where a surface would be routinely exposed to large temperature and humidity differences.

16. Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to utilize an anti-fogging coating composition containing one or more of PVP, PVA, PVAc, and PU as taught by Scholz et al. on the viewing surfaces of the vacuum insulated glazing taught by Florentin et al.

17. One would have been motivated to make this modification due to the fact that the Scholz et al. coating composition does not require power to operate, and thus would provide a reduction in the operating cost of the environmental chamber taught by Florentin et al. One would have been motivated to choose the specific polymers above in view of the fact that Scholz recognizes the equivalency of these polymers to the others listed as suitable for use.

18. While the examiner acknowledges that neither Florentin nor Scholz teaches utilizing an anti-fog coating composition comprising a hydrophilic polymer and an absorbent material porous to water on a refrigerated window enclosure, these references are both directed towards solving a similar problem, namely preventing a

window from losing its transparency due to condensation forming on the surface of the window. As Scholz teaches a solution to this problem that does not require power, there is clear motivation to substitute the anti-fog film taught by Scholz for the current heating solution of Florentin.

19. The examiner notes that Florentin as modified by Scholz does not teach the property limitations of claim 52.

20. However, the film detailed by Scholz utilizes a similar if not identical binder (PVP, PVA, PVAc, or PVU) as that utilized by the invention. In addition, the Scholz film utilizes similar if not identical inorganic/organic absorbent materials (porous inorganic titanium oxide network, tetraethoxy orthosilicate, hydrophilic polymer surfactants) as those utilized by the instant invention. Still further, the film of Scholz meets many of the thickness requirements of the instant claims and is deposited on a primer layer that is similar if not identical to that utilized by the instant invention.

21. With these similarities in mind, it has been held that where claimed and prior art products are identical or **substantially identical in structure or composition**, or are produced by identical or substantially identical processes, a *prima facie* case of either anticipation or obviousness has been established and **the burden of proof is shifted to applicant** to show that prior art products do not necessarily on inherently possess characteristics of claimed products where the rejection is based on inherency under 35 USC 102 or on *prima facie* obviousness under 35 USC 103, jointly or alternatively. *In re Best*, 562 F.2d 1252, 1255, 195 USPQ 430, 433 (CCPA 1977). "When the PTO shows a sound basis for believing that the products of the applicant and the prior art are the

Art Unit: 1773

same, the applicant has the burden of showing that they are not." *In re Spada*, 911 F.2d 705, 709, 15 USPQ2d 1655, 1658 (Fed. Cir. 1990). Therefore, the *prime facie* case can be rebutted by **evidence** showing that the prior art products do not necessarily possess the characteristics of the claimed product. *In re Best*, 562 F.2d at 1255, 195 USPQ at 433.

22. In view of the substantial similarities between the structure and composition of the Scholz product and the product of the instant invention, the examiner takes the position that the property limitation required by claim 52 will be necessarily met by the Florentin as modified by Scholz, as **there is no evidence of record showing that the Scholz film does not necessarily possess the characteristics of the claimed product.** (The applicant is directed to the examiners note below).

23. The limitations of claim 53 are met as set forth above.

24. Claims 54 and 55 require the antifrosting adsorbent film to have a thickness less than 100 μ m and 20 μ m respectfully. Scholz typically forms the film to a thickness of 500-2500 angstroms (column 21, lines 1-21).

25. Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to form the anti-fogging film of Florentin as modified by Scholz to a thickness of 500-2500 angstroms, as Scholz explicitly teaches that this thickness range is suitable.

26. Claims 57 through 60 are met for the same reasons as set forth above for claims 52 through 55.

27. Claims 62 through 66 are met as set forth above.

Art Unit: 1773

28. Claims 68 through 72 are met as set forth above.

29. Claims 56, 61, 67, and 73 are rejected under 35 U.S.C. 103(a) as being unpatentable over Florentin as modified by Scholz as applied to claim 52-55, 57-60, 62-66, and 68-72 above, and further in view of Hatekeyama et al. (US6394613).

30. Florentin as modified by Scholz fails to teach a water adsorbing film having a thickness that is ≥ 14.5 but $\leq 100\mu$, as required by claims 56, 61, 67, and 73.

31. However, Hatekeyama teaches an antifogging coating that is similar to that of Scholz, and teaches that if the coating is less than 1μ thick, the anti-fogging properties of the film are reduced, and if the film is formed to be greater than 20μ thick, the film is not uniform (see column 4, lines 1-8)

32. Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to form the anti-fog coating of Florentin as modified by Scholz to a thickness of 20μ , in view of the teaching in Hatekeyama that an anti-fogging film (similar to Scholz' film) that is 20μ thick exhibits improved antifogging properties over a film that is less than 1μ thick.

33. Regarding the modification of Florentin as modified by Scholz with Hatekeyama. The examiner acknowledges that Scholz teaches that the anti-fog/anti-reflection film is suitably formed to a thickness between 500-2500 angstroms, which is substantially thinner than that suggested by Hatekeyama. Scholz also teaches that if the film is formed outside this thickness range, the antireflection properties of the film may decrease drastically. This statement in Scholz merely teaches that controlling the thickness of the film within 500-2500 angstroms optimizes the films antireflection

properties, it does not teach away from the use of another thickness. This is particularly true given the fact that Scholz requires no minimum amount of antireflection, and is also concerned with the film exhibiting good antifogging properties. Further, Hatekeyama clearly shows that a film similar to the Scholz film exhibits reduced antifogging properties when it is less than 1μ thick. Thus, the prior art is basically teaching that by controlling the thickness of an anti-fogging film, the anti-fogging or antireflection properties of the film can be optimized. Thus, given that the Scholz patent requires no minimum amount of antireflection, one of ordinary skill would have been motivated with a reasonable expectation of success to modify the Scholz film per the teachings of Hatekeyama so as to obtain a film having improved anti-fogging properties.

Response to Arguments

34. Applicant's arguments filed 10/27/2004 have been fully considered but they are not persuasive.
35. Applicants first argue that the "consisting essentially of" language in the instant claims distinguishes the instantly claimed antifrosting adsorbent coating composition from that of the Scholz reference. In particular, applicants assert that the claimed coating distinguishes Scholz by excluding the inorganic metal particles utilized by Scholz from the composition. In other words, the claimed composition is free of particulates, and consists essentially of a polymeric coating. According to the applicant, the inorganic metal particles of Scholz create voids by packing together, and thus materially affect the basic and novel characteristics of the coating.

36. The examiner understands that the applicant by their amendment to the claims and their argument desires to invoke the narrower construction of the transitional phrase "consisting essentially of." "Consisting essentially of" is a transitional phrase of art, and when invoked properly limits the claimed invention to the specifically enumerated elements, and those that do not materially impact the "basic and novel characteristics of the invention".

37. However, MPEP 2111.03 requires the examiner to construe the phrase "consisting essentially of" as "comprising" in the absence of a clear indication in the specification or the claims of what the basic and novel characteristics actually are. It is the examiners position that the basic and novel characteristics of the invention is not pointed out clearly in either the specification or the claims. Thus, the examiner is required to interpret "consisting essentially of" as "comprising. The examiner respectfully suggests the applicant in their response particularly point out which properties of the invention they consider to be basic and novel. However, the applicant should note that even if the narrower construction of "consisting essentially of" becomes properly invoked, the rejection will not be overcome. This is because applicant's blanket and uncorroborated assertion that the particles in Scholz "materially affect[ing] the basic and novel characteristics of the coating" is not sufficient to establish on the record that the particles have any impact on the basic and novel characteristics of the claimed coating.

38. Applicant then argues that there is nothing in Scholz that suggests using the film on a refrigerated door enclosure. Specifically, applicants point out that Scholz is

designed to be an anti-fogging film, not an anti-frosting film. Thus, the applicant asserts that the Scholz film is a fundamentally different type of film from that of the claimed invention. The examiner respectfully disagrees. As set forth above, Scholz teaches that the coating composition is effective for the prevention of fog on a number of substrates, including windows (column 3, lines 60-65). In particular, the film is useful on surfaces where there is a large temperature and humidity difference (column 1, lines 59-61). A refrigerator door enclosure as disclosed by Florentin has both a glass surface onto which the Scholz film would be appropriately formed, and has at least one surface which will experience a large temperature and humidity difference. Thus, there is strong motivation to use the Scholz film on the surface of the refrigerated door enclosure taught by Florentin.

Examiner's Note

39. The examiner notes that the applicant has not made the argument that the Scholz film does not meet the claimed antifrosting properties. This argument, coupled with some relatively easy to obtain evidence would likely overcome the cited prior art. The examiners amendment hinges on the argument that the Scholz film necessarily meets the claimed properties. The examiner bases this assertion on the fact that Scholz uses similar classes of polymers (PVP, PU), for a similar application (anti-fogging), on similar substrates (glass). However, as the examiner is sure the applicant knows, there are a wide variety of known polyvinylpyrrolidones and polyurethanes. If applicant established that one type of polyvinylpyrrolidone, polyurethane, or blend thereof meets

Art Unit: 1773

the claimed properties, but another does not, the examiner's argument would likely be rendered untenable.

40. Alternatively, if applicants argue that the basic and novel characteristic of the invention is the anti-frosting property required by claim 1 and can show that the inorganic particles of Scholz materially impact this property, the examiner's argument would likely be rendered untenable.

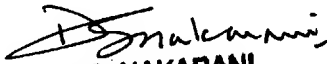
Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Nikolas J. Uhler whose telephone number is 571-272-1517. The examiner can normally be reached on Mon-Fri 7:30 am - 5 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Deborah Jones can be reached on 571-272-1535. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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D. S. NAKARANI
PRIMARY EXAMINER